# Provincial Report

Grade 12 Diploma Examinations
January 1986 Administration

# Student Evaluation

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The Conference of Alberta School Superintendents
The Universities Co-ordinating Council
The Public Colleges of Alberta
Alberta Education

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George Bevan
Director
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# SECTION 1: GRADE 12 DIPLOMA EXAMINATIONS PROGRAM

## Preface

Following each major administration of the diploma examinations, a report of provincial results is prepared. This document is the report for the January 1986 administration. Each school and school jurisdiction also receives a report of examination results for its students.

The *Provincial Report* consists of general information about the diploma examinations program, followed by information specific to each subject. Letter grade distributions, averages and standard deviations for school-awarded, diploma examination and final blended marks are provided. In addition, diploma examination results are presented separately for written response, multiple-choice and selected reporting categories. Examination blueprints which form the basis for reporting categories are also included.

The reported figures are based on all students for whom both a school-awarded mark and a diploma examination mark are available. This group constitutes virtually all students completing the examination, and includes students in non-private and private schools.

The *Provincial Report* is intended as a supplement to the diploma examination bulletins, school and school jurisdiction reports, content specifications for each subject and the examinations themselves. Information from these documents should enable teachers, principals, superintendents and others to make judgments with respect to the quality of student achievement at the provincial level and within schools and school systems.

Judgments about student performance should be applied to the task of improving instruction. Educators in each jurisdiction are encouraged to study carefully the examination results to determine the strengths and weaknesses of their instructional programs. Guidelines for interpreting school and school jurisdiction reports accompany those documents. The Student Evaluation Branch will assist educators in further analysis and interpretation on request.

## Introduction

The Grade 12 Diploma Examinations Program, which is an integral part of the high school diploma requirements, is intended to develop and maintain excellence in educational standards through certification of academic achievement. All Grade 12 students in Alberta are now required to write at least ONE diploma examination to receive a high school diploma. Also, mature students may receive credits for a Grade 12 course by writing the appropriate diploma examination without registering in the course.

The Diploma Examinations Program consists of course-specific examinations that are based on the prescribed *Program of Studies for Senior High Schools* for the following Grade 12 courses: English 30, English 33, Social Studies 30, Mathematics 30, Biology 30, Chemistry 30, and Physics 30. Except for English 30 and English 33, the diploma examinations are available in French translation on request. The diploma examinations are administered three times yearly; in January, June, and August.

Alberta Education issues two distinct high school diplomas: the General High School Diploma and the Advanced High School Diploma.

## General High School Diploma

To earn a General High School Diploma, a student must obtain course credit in either English 30 or English 33 and obtain 100 credits distributed over courses as specified in the *Junior-Senior High School Handbook*. Some students who are working toward the general diploma may wish to obtain credits in other diploma examination courses (i.e. Social Studies 30, Mathematics 30, Biology 30, Chemistry 30, and Physics 30). To obtain credits in these courses, a student must also write the appropriate diploma examination regardless of the type of diploma he wishes to receive.

## Advanced High School Diploma

The Advanced High School Diploma represents achievement in an academic program that includes language arts (English), social studies, mathematics, and science. To earn an Advanced High School Diploma, a student must satisfy the current course and credit requirements for a General High School Diploma, and obtain course credits in English 30, Social Studies 30, Mathematics 30, and ONE of Biology 30, Chemistry 30, or Physics 30.

## Awarding of Course Credits

*Grade 10 and Grade 11 Courses*. To obtain credits in Grade 10 (10-level) and Grade 11 (20-level) courses, a student must earn a final mark of 40% or better. A student who has achieved a mark of 50% or higher in a given course is eligible to take the next or higher-rank high school course in that sequence.

*Grade 12 Courses*. To obtain credit in a Grade 12 (30-level) course, a student must earn a final mark of 50% or better. To obtain credit in a Grade 12 diploma examination course, a student must write the appropriate diploma examination and attain a final blended mark of 50% or better. The final blended mark is made up of 50% of the mark awarded by the school and 50% of the diploma examination mark. For example, a student taking Physics 30 might have a mark of 45% from his school and a mark of 57% on the diploma examination. This student would earn credits for Physics 30 because his final mark would be 51%, which is the average of the school and examination marks. For mature students who do not have a school mark or who have a school mark lower than the examination mark, the examination mark is the final mark.

## Award of Excellence

When candidates for an Advanced High School Diploma obtain a final average of 80% or higher on the four required diploma examination courses with not less than 65% in any one of these four required courses, they receive an Award of Excellence. This Award of Excellence is noted on the student's Advanced High School Diploma.

When a student writes two or three of the diploma examinations in Biology 30, Chemistry 30, and Physics 30, the highest of these final course marks is used for diploma purposes and in the calculation of the average for the Award of Excellence.

## SECTION 2: ENGLISH 30 DIPLOMA EXAMINATION

The English 30 Diploma Examination consists of two parts: Part A: Written Response and Part B: Reading (Multiple Choice), each worth 50% of the total examination mark.

Table 1 contains percentage distributions for school-awarded marks, diploma examination marks, and final blended marks in English 30. Table 2 contains averages and standard deviations for the written-response questions and the multiple-choice questions. Averages given in Table 2 are based on raw scores, which are the number of marks obtained on each part of the examination.

The total marks possible are identified for the written-response and multiple-choice components.

Averages in both tables are based on the results achieved by 8284 students. Differences between total averages and component averages are due to rounding.

Table 1

Provincial Percentages of A, B, C, and F Grades, Averages and Standard Deviation of Scores
English 30

| Score | School-Awarded Mark | Diploma Examination Mark | Final Blended Mark |
|---|---|---|---|
| A (80-100%) | 10.7 | 7.8 | 7.6 |
| B (65-79%) | 38.9 | 34.2 | 38.8 |
| C (50-64%) | 42.4 | 44.5 | 47.8 |
| F (0-49%) | 8.0 | 13.5 | 5.8 |
| Average (%) | 64.2 | 62.3 | 63.8 |
| Standard Deviation | 11.8 | 12.0 | 10.7 |

Table 2

Multiple Choice and Written Response Raw Score Totals
English 30

| Examination Section | Total Marks | Weighting (%) | Average | Standard Deviation |
|---|---|---|---|---|
| Part A: Written Response | 50 | 50 | 30.5 | 6.5 |
| Part B: Multiple Choice | 78 | 50 | 49.6 | 10.9 |

Table 3

January 1986 English 30 Diploma Examination Blueprint
Part A: Written Response

| Description of the Writing Assignment | Reporting Category | Proportion of Total Mark |
|---|---|---|
| Minor Assignments | | |
| The two writing assignments are connected to the reading of literary selections contained in the examination. In Assignment One, the student is required to respond to the selections in a personal context. In Assignment Two, the student is required to understand, analyze, and evaluate techniques used in literature and to synthesize his thoughts clearly and correctly in writing. | 1. Thought & Detail | 15% |
| | 2. Writing Skills | 5% |
| Major Assignment | | |
| The writing assignment sets a specific writing task, but allows the student to choose his own method of development and to select supporting details from personal experience with literature that he has studied. The writing assignment is generated from literary selections and requires the student to understand literal and implied meanings and to synthesize his thoughts clearly and correctly in writing. | 1. Total Impression | 5% |
| | 2. Thought & Detail | 10% |
| | 3. Organization | 5% |
| | 4. Matters of Choice | 5% |
| | 5. Matters of Convention | 5% |
| | | 50% |

Table 4

Percentage Distribution of Scores on English 30 Part A
Minor Assignments (Personal Response and Critical Response)

| Score Scale Points | Personal Response Reporting Category | | Critical Response Reporting Category | |
|---|---|---|---|---|
| | Thought & Detail | Writing Skills | Thought & Detail | Writing Skills |
| 5 (Exceptional) | 3.2 | 3.9 | 3.1 | 3.8 |
| 4 (Proficient) | 24.4 | 32.9 | 20.2 | 26.6 |
| 3 (Satisfactory) | 61.7 | 54.4 | 44.7 | 57.6 |
| 2 (Limited) | 9.2 | 7.6 | 26.0 | 9.2 |
| 1 (Poor) | 0.9 | 0.7 | 4.3 | 1.1 |
| INS (Insufficient or no response) | 0.5 | 0.5 | 1.7 | 1.7 |

Table 5

Percentage Distribution of Scores on English 30 Part A
Major Assignment

| Score Scale Points | Reporting Category | | | | |
|---|---|---|---|---|---|
| | Total Impression | Thought and Detail | Organiz-ation | Matters of Choice | Matters of Convention |
| 5 (Exceptional) | 2.7 | 2.8 | 3.1 | 3.4 | 5.3 |
| 4 (Proficient) | 16.8 | 16.1 | 19.8 | 22.9 | 31.2 |
| 3 (Satisfactory) | 52.3 | 44.2 | 59.8 | 59.3 | 50.9 |
| 2 (Limited) | 25.3 | 32.2 | 15.3 | 12.3 | 10.2 |
| 1 (Poor) | 2.2 | 4.0 | 1.3 | 1.3 | 1.7 |
| INS (Insufficient or no response) | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |

Table 6

January 1986 English 30 Diploma Examination Blueprint
Part B: Reading (Multiple Choice)

| Reporting Category | Questions by Cognitive Level | | | Exam Emphasis |
|---|---|---|---|---|
| | Literal Understanding | Inference and Application | Evaluation | |
| Meanings | 48,49,63*, 65,66,68,75 | 3,5,7,9,11, 19,24,30,31, 33,35,39,40, 43,46,52,53, 69,71,73,79 | 4,10,14, 21,29,32, 54,55,64 | 23% |
| Critical Response | | 1,2,8,12,13, 16,17,23,26, 28,38,41,45, 50,51,57,67, 72 | 6,18,20, 25,56,70, 74 | 16% |
| Human Experience and Values | | 27,34,42,59, 60,61,62*, 77 | 15,22,36, 37,44,47, 58,76,78, 80 | 11% |
| Exam Emphasis | 4.5% | 29.5% | 16% | 50% |

*Questions 62 and 63 were deleted from the examination. Student responses to these questions indicate that one or more alternatives in each question were ambiguously worded.

Table 7

Raw Score Results for English 30 Part B

| Reporting Category | Average | Standard Deviation |
|---|---|---|
| 1. Meanings (36 questions) | 23.2 | 5.5 |
| 2. Critical Response (25 questions) | 15.8 | 3.9 |
| 3. Human Experience and Values (17 questions) | 10.6 | 2.8 |

Multiple-Choice Questions

The percentage of students choosing each response for each multiple-choice question is given in Table 8. The correct response (key) for each question is also identified. Schools may use this information in conjunction with the test and with school results on individual items to determine local strengths and weaknesses.

Table 8

Results for Individual Multiple-Choice Questions
English 30

| Item | Key | Distribution of Responses in %* A | B | C | D | Item | Key | Distribution of Responses in %* A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | 17.8 | 26.8 | 47.5 | 7.8 | 41 | D | 1.3 | 17.6 | 9.0 | 72.1 |
| 2 | C | 8.6 | 8.3 | 77.8 | 5.3 | 42 | B | 23.0 | 58.3 | 11.8 | 6.8 |
| 3 | C | 2.3 | 2.7 | 73.4 | 21.6 | 43 | A | 73.2 | 6.0 | 4.3 | 16.5 |
| 4 | B | 11.4 | 63.8 | 10.6 | 14.1 | 44 | A | 79.4 | 5.0 | 9.5 | 6.1 |
| 5 | D | 3.3 | 9.4 | 4.7 | 82.5 | 45 | D | 21.4 | 28.8 | 6.4 | 43.4 |
| 6 | C | 17.4 | 6.3 | 58.2 | 18.0 | 46 | C | 12.3 | 26.3 | 55.3 | 6.0 |
| 7 | D | 5.9 | 6.5 | 7.1 | 80.5 | 47 | D | 8.8 | 5.9 | 3.9 | 81.3 |
| 8 | C | 7.6 | 18.9 | 61.9 | 11.5 | 48 | C | 3.7 | 11.0 | 71.7 | 13.5 |
| 9 | B | 12.0 | 73.6 | 8.7 | 5.7 | 49 | C | 12.8 | 16.0 | 60.9 | 10.2 |
| 10 | C | 10.0 | 19.2 | 64.0 | 6.7 | 50 | D | 8.2 | 9.3 | 11.1 | 71.3 |
| 11 | B | 6.8 | 82.9 | 3.0 | 7.2 | 51 | D | 24.5 | 9.8 | 26.8 | 39.0 |
| 12 | B | 9.7 | 60.5 | 16.3 | 13.5 | 52 | B | 38.0 | 35.8 | 6.8 | 19.3 |
| 13 | B | 11.8 | 62.3 | 11.7 | 14.2 | 53 | A | 50.2 | 5.2 | 35.4 | 9.1 |
| 14 | D | 3.9 | 10.2 | 13.3 | 72.5 | 54 | D | 8.2 | 18.0 | 5.9 | 67.9 |
| 15 | D | 17.3 | 13.2 | 6.7 | 62.7 | 55 | B | 7.1 | 47.2 | 7.1 | 38.5 |
| 16 | C | 17.3 | 24.8 | 40.6 | 17.2 | 56 | B | 13.1 | 71.0 | 7.2 | 8.5 |
| 17 | D | 6.9 | 23.7 | 4.5 | 64.8 | 57 | C | 17.8 | 5.5 | 71.5 | 5.1 |
| 18 | C | 23.2 | 4.9 | 55.2 | 16.7 | 58 | C | 21.7 | 11.8 | 55.4 | 11.0 |
| 19 | D | 7.2 | 4.0 | 18.5 | 70.3 | 59 | B | 5.6 | 78.5 | 6.5 | 9.3 |
| 20 | D | 8.6 | 28.0 | 9.9 | 53.3 | 60 | B | 32.6 | 35.8 | 18.6 | 12.7 |
| 21 | C | 9.1 | 5.4 | 62.1 | 23.4 | 61 | B | 19.4 | 68.3 | 2.9 | 9.3 |
| 22 | A | 70.7 | 17.7 | 10.4 | 1.2 | 62 | - | - | - | - | - |
| 23 | B | 12.4 | 72.8 | 8.0 | 6.7 | 63 | - | - | - | - | - |
| 24 | C | 13.7 | 17.2 | 63.7 | 5.3 | 64 | D | 24.6 | 9.3 | 1.6 | 64.2 |
| 25 | D | 23.2 | 4.7 | 2.2 | 69.9 | 65 | A | 62.9 | 4.6 | 5.6 | 26.6 |
| 26 | B | 7.4 | 62.6 | 10.6 | 19.3 | 66 | D | 4.8 | 15.4 | 14.7 | 64.9 |
| 27 | B | 8.5 | 70.4 | 5.6 | 15.5 | 67 | A | 41.2 | 38.4 | 13.3 | 6.9 |
| 28 | A | 78.0 | 3.2 | 8.8 | 10.0 | 68 | A | 81.6 | 7.3 | 3.6 | 7.3 |
| 29 | A | 57.5 | 8.5 | 5.9 | 28.1 | 69 | D | 20.7 | 18.2 | 9.3 | 51.6 |
| 30 | C | 8.3 | 4.5 | 68.6 | 18.6 | 70 | B | 6.7 | 67.9 | 9.5 | 15.7 |
| 31 | D | 7.3 | 13.8 | 11.3 | 67.6 | 71 | D | 25.2 | 6.1 | 33.2 | 35.2 |
| 32 | A | 76.1 | 8.6 | 11.8 | 3.5 | 72 | A | 69.7 | 19.9 | 3.4 | 6.8 |
| 33 | D | 2.6 | 4.3 | 13.1 | 80.0 | 73 | A | 40.9 | 9.4 | 41.3 | 7.9 |
| 34 | A | 37.4 | 2.2 | 15.4 | 45.0 | 74 | B | 7.8 | 85.2 | 5.4 | 1.2 |
| 35 | A | 70.4 | 2.5 | 23.6 | 3.4 | 75 | C | 4.3 | 13.1 | 72.7 | 9.4 |
| 36 | B | 8.1 | 48.5 | 23.2 | 20.1 | 76 | D | 12.5 | 11.0 | 16.6 | 59.3 |
| 37 | D | 0.8 | 4.8 | 37.2 | 57.1 | 77 | B | 8.4 | 71.5 | 13.9 | 5.6 |
| 38 | A | 79.4 | 7.1 | 2.2 | 11.3 | 78 | C | 7.2 | 8.6 | 74.8 | 8.8 |
| 39 | A | 83.1 | 6.4 | 8.0 | 2.4 | 79 | C | 12.4 | 9.9 | 50.5 | 26.5 |
| 40 | A | 43.2 | 25.0 | 21.9 | 9.8 | 80 | B | 19.5 | 50.6 | 4.7 | 24.4 |

*The sum of the percentages for each question may be less than 100% because the No Response category is not included. This category is not greater than 0.7% for any question.

## SECTION 3: ENGLISH 33 DIPLOMA EXAMINATION

The English 33 Diploma Examination consists of two parts: Part A: Written Response and Part B: Reading (Multiple Choice), each worth 50% of the total examination mark.

Table 9 contains percentage distributions for school-awarded marks, diploma examination marks, and final blended marks in English 33. Table 10 contains averages and standard deviations for the written-response questions and the multiple-choice questions. Averages given in Table 2 are based on raw scores, which are the number of marks obtained on each part of the examination.

The total marks possible are identified for the written-response and multiple-choice components.

Averages in both tables are based on the results achieved by 4218 students. Differences between total averages and component averages are due to rounding.

Table 9

Provincial Percentages of A, B, C, and F Grades, Averages and Standard Deviation of Scores
English 33

| Score | School-Awarded Mark | Diploma Examination Mark | Final Blended Mark |
|---|---|---|---|
| A (80-100%) | 3.7 | 8.4 | 3.5 |
| B (65-79%) | 31.1 | 44.0 | 40.3 |
| C (50-64%) | 51.2 | 37.0 | 50.2 |
| F (0-49%) | 14.0 | 10.6 | 6.0 |
| Average (%) | 59.8 | 64.4 | 62.6 |
| Standard Deviation | 11.1 | 11.6 | 9.6 |

Table 10

Multiple Choice and Written Response Raw Score Totals
English 33

| Examination Section | Total Marks | Weighting (%) | Average | Standard Deviation |
|---|---|---|---|---|
| Part A: Written Response | 50 | 50 | 32.3 | 5.8 |
| Part B: Multiple Choice | 70 | 50 | 44.9 | 10.4 |

Table 11

January 1986 English 33 Diploma Examination Blueprint
Part A: Written Response

| Description of the Writing Assignment | Reporting Category | Proportion of Total Mark |
|---|---|---|
| Personal Response to Literature<br><br>The student is required to read a short literary selection that serves as a stimulus for a personal or reflective response. | 1. Thought & Detail | 10% |
| | 2. Organization | 5% |
| | 3. Matters of Choice | 5% |
| | 4. Matters of Convention | 5% |
| Functional Writing<br><br>The student is required to write for a specified purpose and audience. | 1. Thought & Detail | 10% |
| | 2. Organization | 2.5% |
| | 3. Writing Skills | 2.5% |
| Response to Visual Communication<br><br>Writing assignments are connected to a cartoon. The student is required to write about main ideas, techniques of communication, and personal reactions. | 1. Thought & Detail | 5% |
| | 2. Writing Skills | 5% |
| | | 50% |

Table 12

Percentage Distribution of Scores on English 33 Part A
Section I: Personal Response to Literature

| Score Scale Points | Reporting Category | | | |
|---|---|---|---|---|
| | Thought & Detail | Organization | Matters of Choice | Matters of Convention |
| 5 (Proficient) | 4.0 | 3.7 | 3.8 | 7.4 |
| 4 (Capable) | 31.7 | 35.9 | 29.9 | 41.3 |
| 3 (Adequate) | 53.3 | 55.3 | 57.7 | 39.4 |
| 2 (Limited) | 10.0 | 4.5 | 7.7 | 10.1 |
| 1 (Poor) | 0.7 | 0.2 | 0.5 | 1.4 |
| INS (Insufficient or no response) | 0.4 | 0.4 | 0.4 | 0.4 |

Table 13

Percentage Distribution of Scores on English 33 Part A
Section II: Functional Writing

| Score Scale Points | Reporting Category | | |
|---|---|---|---|
| | Thought & Detail | Organization | Writing Skills |
| 5 (Proficient) | 2.9 | 3.1 | 4.5 |
| 4 (Capable) | 27.4 | 30.6 | 33.1 |
| 3 (Adequate) | 45.6 | 52.4 | 47.6 |
| 2 (Limited) | 21.1 | 12.4 | 12.4 |
| 1 (Poor) | 2.1 | 0.6 | 1.4 |
| INS (Insufficient or no response) | 0.9 | 0.9 | 0.9 |

Table 14

Percentage Distribution of Scores on English 33 Part A
Section III: Response to Visual Communication

| Score Scale Points | (Question 1) Reporting Category | | (Question 2) Reporting Category | |
|---|---|---|---|---|
| | Thought & Detail | Writing Skills | Thought & Detail | Writing Skills |
| 5 (Proficient) | 5.1 | 4.0 | 3.7 | 3.5 |
| 4 (Capable) | 26.5 | 34.4 | 21.0 | 31.0 |
| 3 (Adequate) | 47.3 | 47.3 | 36.2 | 48.5 |
| 2 (Limited) | 15.7 | 10.8 | 28.2 | 11.2 |
| 1 (Poor) | 3.3 | 1.4 | 6.6 | 1.4 |
| INS (Insufficient or no response) | 2.2 | 2.2 | 4.3 | 4.3 |

Table 15

January 1986 English 33 Diploma Examination Blueprint
Part B: Reading (Multiple Choice)

| Reporting Category | Questions by Cognitive Level | | | Exam Emphasis |
|---|---|---|---|---|
| | Literal Understanding | Inference and Application | Evaluation | |
| Meanings | 32,36,42, 47 | 1,2,3,9,12, 15,17,21,33, 38,39,41,44, 45,46,48,49, 50,58,59 | 5,10,65, 70 | 20% |
| Relationships of Form and Content | | 4,6,8,11,16, 18,20,30,35, 40,63,64,69 | 14,62 | 10.5% |
| Human Experience and Values | | 13,31,34,37, 51,52,60,61, 66,67,68 | 7,19,43 | 10% |
| Life Skills | 28,29 | 22,23,24,25, 27,54,55,57 | 26,53,56 | 9.5% |
| Exam Emphasis | 4.5% | 37% | 8.5% | 50% |

Table 16

Raw Score Results for English 33 Part B

| Reporting Category | Average | Standard Deviation |
|---|---|---|
| 1. Meanings (28 questions) | 17.8 | 4.8 |
| 2. Relationships: Form & Content (15 questions) | 9.6 | 2.7 |
| 3. Human Experience and Values (14 questions) | 8.8 | 2.7 |
| 4. Life Skills (13 questions) | 8.7 | 2.1 |

Multiple-Choice Questions

The percentage of students choosing each response for each multiple-choice question is given in Table 17. The correct response (key) for each question is also identified. Schools may use this information in conjunction with the test and with school results on individual items to determine local strengths and weaknesses.

Table 17

Results for Individual Multiple-Choice Questions
English 33

| Item | Key | Distribution of Responses in %* A | B | C | D | Item | Key | Distribution of Responses in %* A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B | 19.3 | 52.2 | 24.2 | 4.2 | 36 | D | 10.2 | 4.4 | 9.3 | 76.0 |
| 2 | B | 9.8 | 81.6 | 6.0 | 2.5 | 37 | A | 70.1 | 13.1 | 6.4 | 10.5 |
| 3 | A | 81.4 | 3.4 | 4.1 | 11.0 | 38 | D | 4.7 | 13.2 | 5.1 | 77.0 |
| 4 | C | 11.1 | 5.3 | 75.7 | 7.8 | 39 | C | 37.5 | 6.4 | 50.5 | 5.5 |
| 5 | A | 51.0 | 20.3 | 12.0 | 16.6 | 40 | C | 13.0 | 5.1 | 69.4 | 12.5 |
| 6 | C | 6.2 | 14.9 | 47.2 | 31.5 | 41 | C | 14.5 | 9.4 | 52.4 | 23.7 |
| 7 | D | 9.2 | 3.7 | 8.2 | 78.9 | 42 | B | 14.9 | 51.7 | 19.2 | 14.2 |
| 8 | A | 52.8 | 14.3 | 11.8 | 21.0 | 43 | C | 32.0 | 4.7 | 59.7 | 3.6 |
| 9 | A | 72.6 | 6.6 | 14.5 | 6.3 | 44 | D | 25.3 | 5.2 | 4.2 | 65.3 |
| 10 | D | 5.2 | 18.5 | 7.3 | 68.9 | 45 | D | 13.8 | 4.9 | 9.9 | 71.3 |
| 11 | A | 78.6 | 3.8 | 5.9 | 11.7 | 46 | A | 62.4 | 13.6 | 14.3 | 9.7 |
| 12 | C | 4.9 | 22.9 | 66.3 | 5.8 | 47 | B | 4.5 | 64.7 | 12.9 | 17.9 |
| 13 | A | 57.1 | 9.9 | 17.5 | 15.5 | 48 | A | 58.5 | 8.3 | 20.7 | 12.4 |
| 14 | D | 19.9 | 24.5 | 5.6 | 49.9 | 49 | A | 76.0 | 7.8 | 10.6 | 5.6 |
| 15 | C | 9.9 | 8.6 | 46.9 | 34.6 | 50 | D | 8.7 | 34.8 | 12.5 | 43.9 |
| 16 | B | 9.4 | 72.5 | 13.6 | 4.5 | 51 | C | 10.9 | 6.4 | 76.7 | 6.0 |
| 17 | A | 67.4 | 18.1 | 7.1 | 7.4 | 52 | B | 10.2 | 79.4 | 5.3 | 5.0 |
| 18 | D | 7.1 | 18.8 | 7.1 | 67.0 | 53 | D | 8.1 | 31.8 | 22.2 | 37.8 |
| 19 | D | 9.1 | 23.7 | 8.9 | 58.2 | 54 | D | 8.4 | 15.7 | 9.0 | 66.8 |
| 20 | B | 4.2 | 89.5 | 3.7 | 2.5 | 55 | C | 34.0 | 16.8 | 41.1 | 8.0 |
| 21 | C | 25.9 | 3.2 | 51.7 | 19.1 | 56 | D | 4.7 | 6.4 | 33.0 | 55.7 |
| 22 | A | 73.5 | 18.2 | 1.7 | 6.6 | 57 | A | 56.4 | 2.7 | 5.3 | 35.5 |
| 23 | B | 7.5 | 85.3 | 2.2 | 5.0 | 58 | C | 3.2 | 14.3 | 78.9 | 3.2 |
| 24 | B | 1.3 | 83.0 | 4.9 | 10.7 | 59 | A | 86.0 | 4.8 | 2.7 | 6.3 |
| 25 | D | 5.8 | 7.2 | 3.1 | 83.9 | 60 | D | 3.4 | 13.5 | 3.1 | 79.8 |
| 26 | B | 9.1 | 80.2 | 6.0 | 4.6 | 61 | C | 16.3 | 22.3 | 52.6 | 8.4 |
| 27 | B | 2.1 | 78.3 | 14.0 | 5.5 | 62 | D | 10.2 | 6.3 | 37.7 | 45.4 |
| 28 | B | 20.1 | 51.8 | 17.1 | 11.0 | 63 | A | 66.2 | 15.5 | 12.4 | 5.4 |
| 29 | C | 3.4 | 13.0 | 78.8 | 4.8 | 64 | B | 13.5 | 46.0 | 10.4 | 29.6 |
| 30 | B | 12.8 | 62.3 | 7.8 | 17.0 | 65 | B | 11.6 | 54.8 | 20.8 | 12.2 |
| 31 | C | 5.3 | 8.2 | 75.4 | 11.0 | 66 | C | 15.2 | 22.2 | 29.9 | 32.3 |
| 32 | C | 12.5 | 24.8 | 57.0 | 5.6 | 67 | B | 7.5 | 59.0 | 20.4 | 12.6 |
| 33 | C | 12.6 | 4.6 | 73.1 | 9.6 | 68 | D | 24.6 | 31.4 | 10.3 | 33.2 |
| 34 | A | 78.5 | 7.1 | 4.2 | 10.2 | 69 | A | 70.6 | 11.5 | 10.3 | 6.9 |
| 35 | D | 5.4 | 4.9 | 21.9 | 67.8 | 70 | C | 36.4 | 8.9 | 45.3 | 8.8 |

*The sum of the percentages for each question may be less than 100% because the No Response category is not included. This category is not greater than 0.6% for any question.

## SECTION 4: SOCIAL STUDIES 30 DIPLOMA EXAMINATION

The Social Studies 30 Diploma Examination consists of both multiple-choice questions (worth 70% of the total examination mark) and a written-response question (worth 30% of the total examination mark).

Table 18 contains percentage distributions for school-awarded marks, diploma examination marks, and final blended marks in Social Studies 30. Table 19 contains averages and standard deviations for the written-response questions and the multiple-choice questions. Averages are based on raw scores, which are the number of marks obtained on each part of the examination. The total marks possible are identified for the written-response and multiple-choice components.

Averages are based on the results achieved by 7590 students. Differences between total averages and component averages are due to rounding.

Table 18

Provincial Percentages of A, B, C, and F Grades, Averages and Standard Deviation of Scores
Social Studies 30

| Score | School-Awarded Mark | Diploma Examination Mark | Final Blended Mark |
|---|---|---|---|
| A (80-100%) | 13.9 | 16.0 | 14.2 |
| B (65-79%) | 36.8 | 40.1 | 39.7 |
| C (50-64%) | 41.1 | 32.2 | 39.7 |
| F (0-49%) | 8.1 | 11.7 | 6.4 |
| Average (%) | 64.9 | 66.0 | 65.9 |
| Standard Deviation | 12.0 | 13.1 | 11.8 |

Table 19

Multiple Choice and Written Response Raw Score Totals
Social Studies 30

| Examination Section | Total Marks | Weighting (%) | Average | Standard Deviation |
|---|---|---|---|---|
| Written Response | 30 | 30 | 16.1 | 4.5 |
| Multiple Choice | 70 | 70 | 49.9 | 10.1 |

Table 20

January 1986 Social Studies 30 Diploma Examination Blueprint
Part A: Multiple Choice

| Content Category | Questions by Process Category | | | | | Exam Emphasis |
|---|---|---|---|---|---|---|
| | Recall & Comp. | Inquiry Skills A[1] | Inquiry Skills B[2] | Inquiry Skills C[3] | Valuing Skills | |
| Value Concepts<br><br>competing values & value positions<br>- Topic A<br>- Topic B | 3,13,<br>44 | | | | 15,34,<br>41,42,43 | 8% |
| Political and Economic Systems<br><br>facts, concepts, & generalizations | 1,2,4,<br>5,6,14,<br>16,17,18,<br>19,21,22,<br>23,24,25,<br>26 | 7,27,<br>28 | 8,9,10<br>11,12,20,<br>29,30,31 | 32, 33,<br>35 | | 31% |
| Co-operation & Conflict Among States<br><br>facts, concepts, & generalizations | 36,37,38,<br>39,40,45,<br>52,53,54,<br>57,58,66,<br>67,68,69,<br>70 | 46,47,<br>55 | 48,49,50,<br>51,56,59<br>60,61,65 | 62,63,<br>64 | | 31% |
| Examination Emphasis | 35% | 6% | 18% | 6% | 5% | 70% |

[1]Inquiry Skills A -- Identify and focus on the issue and formulate research questions.

[2]Inquiry Skills B -- Gather, organize, analyze, evaluate, and synthesize data.

[3]Inquiry Skills C -- Resolve the issue, apply the decision, and evaluate decision, process, and action.

Table 21

Raw Score Results for Social Studies 30 Part A

| Reporting Category | Average | Standard Deviation |
|---|---|---|
| 1. Recall & Comprehension (32 questions)* | 21.4 | 5.3 |
| 2. Inquiry Skills: Identify Issue (6 questions) | 4.3 | 1.4 |
| 3. Inquiry Skills: Gather & Use Data (18 questions) | 13.9 | 2.6 |
| 4. Inquiry Skills: Resolve & Decide (6 questions) | 4.2 | 1.4 |
| 5. Valuing (8 questions) | 6.1 | 1.5 |
| 6. Political & Economic Systems (35 questions) | 25.9 | 5.4 |
| 7. Co-operation & Conflict (34 questions) | 24.0 | 5.4 |

* Recall and Comprehension questions in the Value Concept category in Table 20 are included in Reporting Category 5 (Valuing).

Multiple-Choice Questions

The percentage of students choosing each response for each multiple-choice question is given in Table 22. The correct response (key) for each question is also identified. Schools may use this information in conjunction with the test and with school results on individual items to determine local strengths and weaknesses.

Table 22

Results for Individual Multiple-Choice Questions
Social Studies 30

| Item | Key | Distribution of Responses in %* | | | | Item | Key | Distribution of Responses in %* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | | | A | B | C | D |
| 1 | C | 5.9 | 8.6 | 84.1 | 1.3 | 36 | A | 72.8 | 14.3 | 6.1 | 6.7 |
| 2 | D | 2.3 | 3.8 | 8.6 | 85.2 | 37 | C | 2.6 | 15.7 | 50.5 | 31.0 |
| 3 | A | 71.6 | 13.0 | 10.5 | 4.8 | 38 | B | 3.7 | 77.0 | 4.1 | 15.1 |
| 4 | C | 15.4 | 29.9 | 48.5 | 6.2 | 39 | C | 16.3 | 18.1 | 49.8 | 15.8 |
| 5 | D | 6.6 | 5.5 | 13.3 | 74.5 | 40 | B | 7.3 | 61.3 | 17.7 | 13.7 |
| 6 | C | 3.9 | 5.2 | 86.3 | 4.4 | 41 | D | 9.0 | 0.6 | 24.7 | 65.5 |
| 7 | B | 8.9 | 80.3 | 5.3 | 5.5 | 42 | B | 6.3 | 83.1 | 8.5 | 2.1 |
| 8 | B | 3.2 | 84.5 | 6.5 | 5.8 | 43 | B | 17.5 | 72.1 | 4.0 | 6.3 |
| 9 | A | 89.5 | 1.4 | 2.9 | 6.1 | 44 | A | 97.4 | 0.5 | 0.3 | 1.8 |
| 10 | D | 2.6 | 4.4 | 0.9 | 92.0 | 45 | C | 20.7 | 7.8 | 48.4 | 23.1 |
| 11 | A | 93.6 | 3.3 | 2.0 | 1.1 | 46 | A | 65.2 | 22.2 | 4.1 | 8.5 |
| 12 | B | 12.9 | 68.4 | 13.2 | 5.4 | 47 | B | 5.2 | 74.0 | 5.5 | 15.1 |
| 13 | B | 11.1 | 77.1 | 3.8 | 8.1 | 48 | C | 11.2 | 2.9 | 82.2 | 3.7 |
| 14 | D | 6.0 | 6.5 | 3.1 | 84.4 | 49 | A | 43.5 | 9.2 | 1.9 | 45.4 |
| 15 | C | 7.9 | 16.8 | 64.3 | 10.8 | 50 | C | 7.1 | 9.0 | 78.9 | 4.8 |
| 16 | D | 12.5 | 5.7 | 8.9 | 72.8 | 51 | C | 17.8 | 6.6 | 54.2 | 21.5 |
| 17 | B | 10.8 | 74.1 | 10.8 | 4.3 | 52 | A | 62.3 | 8.8 | 19.0 | 9.8 |
| 18 | B | 6.9 | 68.2 | 12.5 | 12.4 | 53 | A | 61.9 | 17.9 | 6.4 | 13.7 |
| 19 | A | 82.9 | 4.1 | 2.7 | 10.3 | 54 | B | 8.2 | 44.7 | 32.8 | 14.2 |
| 20 | D | 1.5 | 14.5 | 2.5 | 81.4 | 55 | D | 16.0 | 12.8 | 3.2 | 68.0 |
| 21 | A | 39.8 | 9.4 | 5.3 | 45.4 | 56 | C | 12.9 | 7.6 | 74.3 | 5.2 |
| 22 | D | 5.2 | 6.2 | 6.0 | 82.6 | 57 | A | 70.4 | 16.1 | 1.8 | 11.7 |
| 23 | D | 2.0 | 15.0 | 4.6 | 78.3 | 58 | D | 7.6 | 5.0 | 13.2 | 74.2 |
| 24 | A | 73.4 | 14.5 | 4.1 | 7.8 | 59 | D | 7.6 | 6.6 | 8.8 | 76.9 |
| 25 | A | 63.8 | 7.2 | 15.4 | 13.4 | 60 | C | 2.5 | 4.2 | 83.6 | 9.8 |
| 26 | A | 56.9 | 15.6 | 12.4 | 15.2 | 61 | A | 63.6 | 5.9 | 22.7 | 7.8 |
| 27 | B | 9.6 | 71.8 | 4.9 | 13.7 | 62 | D | 5.5 | 4.8 | 9.8 | 79.8 |
| 28 | C | 4.2 | 4.3 | 71.5 | 19.9 | 63 | A | 78.1 | 4.4 | 2.6 | 14.8 |
| 29 | A | 85.6 | 3.5 | 5.3 | 5.5 | 64 | C | 3.0 | 2.8 | 87.6 | 6.6 |
| 30 | B | 12.3 | 72.9 | 4.0 | 10.7 | 65 | C | 1.4 | 1.3 | 83.1 | 14.2 |
| 31 | D | 2.8 | 15.4 | 3.8 | 78.0 | 66 | B | 15.5 | 52.9 | 20.5 | 10.8 |
| 32 | D | 1.7 | 11.4 | 28.8 | 58.1 | 67 | B | 9.8 | 63.1 | 21.6 | 5.4 |
| 33 | C | 26.1 | 15.3 | 54.6 | 4.0 | 68 | C | 9.2 | 18.6 | 45.7 | 26.4 |
| 34 | A | 74.0 | 13.2 | 2.7 | 10.1 | 69 | B | 9.9 | 70.0 | 8.6 | 11.4 |
| 35 | D | 20.3 | 8.1 | 10.2 | 61.4 | 70 | C | 8.6 | 6.2 | 80.0 | 5.1 |

*The sum of the percentages for each question may be less than 100% because the No Response category is not included. This category is not greater than 0.2% for any question.

Table 23

January 1986 Social Studies 30 Diploma Examination Blueprint
Part B: Written Response

| Description of Writing Assignment | Reporting Category | Proportion of Total Mark |
|---|---|---|
| One complete and unified essay in which the student integrates steps of the inquiry process in dealing with a given issue. | 1. Explanation of issue | 5% |
| | 2. Description and evaluation of an action or actions | 10% |
| | 3. Presentation and defence of a position on the issue | 10% |
| | 4. Quality of language and expression | 5% |
| | | 30% |

Table 24

Percentage Distribution of Scores on Social Studies 30 Part B

| Score Scale Points | Reporting Category | | | |
|---|---|---|---|---|
| | Explanation of the Issue | Description & Evaluation of Action(s) | Defence of a Position | Quality of Expression |
| 5 (Exceptional) | 1.7 | 1.8 | 1.4 | 1.3 |
| 4 (Proficient) | 13.5 | 16.5 | 11.0 | 16.0 |
| 3 (Satisfactory) | 38.1 | 39.8 | 41.3 | 61.8 |
| 2 (Limited) | 34.7 | 32.5 | 38.1 | 19.8 |
| 1 (Poor) | 11.8 | 8.6 | 7.2 | 0.9 |
| 0 (Insufficient or no response) | 0.2 | 0.8 | 1.0 | 0.1 |

## SECTION 5: MATHEMATICS 30 DIPLOMA EXAMINATION

The Mathematics 30 Diploma Examination consists of both multiple-choice questions (worth 80% of the total examination mark) and written-response questions (worth 20% of the total examination mark).

Table 25

January 1986 Mathematics 30 Diploma Examination Blueprint

| Subject Matter | Questions By Cognitive Level | | | | Exam Emphasis |
|---|---|---|---|---|---|
| | Knowledge | Comprehension | Application | Higher Mental Activities | |
| Trigonometry | 4,11 | 2,3,6,8,12,13 | 1,7,9,10,14, 15,16 | 5 | 25% |
| Quadratic Relations | 20 | 17,21,24,27 | 18,22,23,25, 26,[1] | 19 | 22% |
| Sequences, Series, Limits | 34 | 28,29,33,35 | 30,32,36,[2] | 31 | 18% |
| Statistics | 37 | 38,41 | 39,42,43,[3] | 40 | 15% |
| Logarithms | | 44,45,47,[4] | | 46 | 9% |
| Polynomial Functions | 50 | 52,[5] | 48,49 | 51 | 11% |
| Exam Emphasis | 9% | 37% | 45% | 9% | 100% |

NOTE: Numbers in brackets [ ] indicate the written-response questions.

## Provincial Averages

Table 26 contains percentage distributions for school-awarded marks, diploma examination marks, and final blended marks in Mathematics 30. Table 27 contains averages and standard deviations for the written-response questions and the multiple-choice questions. Averages are based on raw scores, which are the number of marks obtained on each part of the examination. The total marks possible are identified for the written-response and multiple-choice components.

Averages are based on the results achieved by 8357 students. Differences between total averages and component averages are due to rounding.

Table 26

Provincial Percentages of A, B, C, and F Grades, Averages and Standard Deviation of Scores
Mathematics 30

| Score | School-Awarded Mark | Diploma Examination Mark | Final Blended Mark |
|---|---|---|---|
| A (80-100%) | 21.2 | 24.3 | 22.2 |
| B (65-79%) | 32.5 | 28.5 | 31.1 |
| C (50-64%) | 36.0 | 24.7 | 34.5 |
| F (0-49%) | 10.3 | 22.5 | 12.3 |
| Average (%) | 66.3 | 64.7 | 66.0 |
| Standard Deviation | 14.5 | 18.1 | 15.5 |

Table 27

Multiple Choice and Written Response Raw Score Totals
Mathematics 30

| Examination Section | Total Marks | Weighting (%) | Average | Standard Deviation |
|---|---|---|---|---|
| Written Response | 13 | 20 | 8.3 | 3.5 |
| Multiple Choice | 52 | 80 | 33.7 | 9.2 |

Table 28

Provincial Raw Score Averages for Subtests
Mathematics 30

| | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| Subtest | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Trigonometry | - | 16 | 16 | - | 10.4 | 10.4 |
| Quadratic Relations | 3 | 11 | 14 | 2.3 | 7.1 | 9.4 |
| Sequences, Series, and Limits | 3 | 9 | 12 | 1.7 | 5.9 | 7.6 |
| Statistics | 3 | 7 | 10 | 2.1 | 4.6 | 6.6 |
| Logarithms | 2 | 4 | 6 | 0.9 | 2.6 | 3.6 |
| Polynomial Functions | 2 | 5 | 7 | 1.3 | 3.1 | 4.4 |

Table 29

Provincial Raw Score Averages for Cognitive Levels
Mathematics 30

| Subtest | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Knowledge | - | 6 | 6 | - | 3.5 | 3.5 |
| Comprehension | 4 | 20 | 24 | 2.3 | 13.8 | 16.0 |
| Application | 9 | 20 | 29 | 6.0 | 13.6 | 19.6 |
| Higher Mental Activities | - | 6 | 6 | - | 2.9 | 2.9 |

Multiple-Choice Questions

The percentage of students choosing each response for each multiple-choice question is given in Table 30. The correct response (key) for each question is also identified. Schools may use this information in conjunction with the test and with school results on individual items to determine local strengths and weaknesses.

Table 30

Results for Individual Multiple-Choice Questions
Mathematics 30

| Item | Key | Distribution of Responses in %* A | B | C | D | Item | Key | Distribution of Responses in %* A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B | 5.8 | 76.0 | 9.2 | 8.9 | 27 | B | 11.5 | 62.4 | 7.5 | 18.5 |
| 2 | B | 13.6 | 65.6 | 11.7 | 9.1 | 28 | A | 79.5 | 10.7 | 6.3 | 3.1 |
| 3 | C | 15.2 | 7.4 | 74.0 | 3.3 | 29 | A | 84.8 | 6.0 | 6.6 | 2.6 |
| 4 | B | 11.1 | 49.0 | 25.6 | 14.1 | 30 | D | 15.2 | 11.7 | 11.0 | 62.0 |
| 5 | D | 23.0 | 11.7 | 23.2 | 41.4 | 31 | B | 5.7 | 35.7 | 26.7 | 31.6 |
| 6 | C | 21.0 | 15.4 | 53.9 | 9.6 | 32 | B | 6.3 | 77.2 | 7.0 | 9.3 |
| 7 | A | 78.4 | 10.8 | 6.8 | 3.9 | 33 | B | 9.4 | 56.9 | 18.7 | 15.0 |
| 8 | C | 20.3 | 16.4 | 52.8 | 10.2 | 34 | A | 59.9 | 13.6 | 12.6 | 13.7 |
| 9 | A | 75.0 | 10.5 | 3.6 | 10.7 | 35 | D | 6.3 | 15.5 | 8.3 | 69.8 |
| 10 | C | 15.6 | 17.7 | 45.7 | 20.7 | 36 | C | 14.5 | 18.4 | 63.7 | 3.2 |
| 11 | A | 51.9 | 19.5 | 16.6 | 11.7 | 37 | C | 13.1 | 10.3 | 57.0 | 19.5 |
| 12 | C | 3.5 | 3.3 | 89.0 | 4.2 | 38 | D | 14.5 | 3.4 | 12.4 | 69.6 |
| 13 | A | 63.7 | 9.4 | 8.2 | 18.6 | 39 | A | 83.3 | 11.7 | 2.5 | 2.4 |
| 14 | C | 11.8 | 7.5 | 79.0 | 1.6 | 40 | A | 46.6 | 24.5 | 16.9 | 11.8 |
| 15 | D | 7.5 | 11.9 | 13.4 | 66.8 | 41 | D | 7.4 | 13.4 | 14.2 | 65.0 |
| 16 | B | 9.1 | 76.0 | 10.2 | 4.5 | 42 | B | 9.4 | 49.1 | 25.7 | 15.3 |
| 17 | B | 8.5 | 76.0 | 8.1 | 7.1 | 43 | D | 4.8 | 5.6 | 6.4 | 83.1 |
| 18 | B | 20.4 | 62.9 | 9.7 | 6.8 | 44 | C | 4.0 | 7.2 | 82.2 | 6.5 |
| 19 | D | 7.4 | 21.8 | 14.2 | 56.3 | 45 | C | 13.2 | 5.8 | 58.8 | 22.1 |
| 20 | C | 12.7 | 11.5 | 65.9 | 9.9 | 46 | A | 52.7 | 19.0 | 9.4 | 18.2 |
| 21 | D | 15.5 | 10.9 | 12.4 | 61.1 | 47 | C | 7.6 | 15.6 | 68.9 | 7.8 |
| 22 | A | 57.3 | 10.6 | 24.4 | 7.6 | 48 | A | 72.8 | 10.5 | 5.9 | 10.7 |
| 23 | B | 4.8 | 80.8 | 10.9 | 3.3 | 49 | C | 9.3 | 16.4 | 46.9 | 27.1 |
| 24 | C | 9.9 | 18.1 | 69.0 | 3.0 | 50 | D | 9.2 | 8.5 | 15.7 | 66.4 |
| 25 | B | 10.8 | 53.2 | 27.0 | 8.6 | 51 | A | 53.6 | 26.8 | 11.6 | 7.1 |
| 26 | A | 67.7 | 17.2 | 12.4 | 2.7 | 52 | D | 10.6 | 6.5 | 12.9 | 68.8 |

*The sum of the percentages for some questions is less than 100% because the No Response category is not included. This category does not exceed 1.8% for any question.

Table 31

Distribution of Marks for Written-Response Questions
Mathematics 30

| Question | Percentage of Students Obtaining Each Mark | | | | |
|---|---|---|---|---|---|
| | NR* | 0 | 1 | 2 | 3 |
| 1 | 6.0 | 13.8 | 4.0 | 6.7 | 69.4 |
| 2 | 5.7 | 19.9 | 24.6 | 3.7 | 46.1 |
| 3 | 3.8 | 19.9 | 9.0 | 6.2 | 61.1 |
| 4 | 11.6 | 36.8 | 11.0 | 40.6 | - |
| 5 | 2.5 | 22.4 | 16.0 | 59.1 | - |

*No Response

The total number of marks possible, the average mark awarded to students, and the difficulty level for each written-response question are summarized in Table 32. The difficulty level is the average divided by total marks possible.

Table 32

Average Marks Awarded for Written-Response Questions
Mathematics 30

| Question | Total Marks | Average | Difficulty Level |
|---|---|---|---|
| 1 | 3 | 2.3 | 0.75 |
| 2 | 3 | 1.7 | 0.57 |
| 3 | 3 | 2.0 | 0.68 |
| 4 | 2 | 0.9 | 0.46 |
| 5 | 2 | 1.3 | 0.67 |

## SECTION 6: BIOLOGY 30 DIPLOMA EXAMINATION

The Biology 30 Diploma Examination consists of both multiple-choice questions (worth 80% of the total examination mark) and written-response questions (worth 20% of the total examination mark).

Table 33

January 1986 Biology 30 Diploma Examination Blueprint

| Subject Matter | Questions By Cognitive Level | | | Exam Emphasis |
|---|---|---|---|---|
| | Knowledge | Comprehension and Application | Higher Mental Activities | |
| Cellular Processes | 1,2,3 | 4,5,6 | 7 | 7% |
| Homeostatic Mechanisms | 8 | 9,10 | | 3% |
| Nutrition | 11,12,13,14 [2] | 15,16,17,18,19, 20,21 | 22,23,[1] | 20% |
| Circulation | 24,25,26,27, 28 | 29,30,31,32,33 [3] | 34,35 | 15% |
| Gas Exchange | 36,37 | 38,39,[4] | 40,41 | 7% |
| Metabolism | 42,[5] | 43*,44,45 | | 5% |
| Excretion | 46,47,48 | 49,50,51,52,[6] | 53 | 10% |
| Nervous & Hormonal System | 54,55,56,57, 58,59 | 60,61,62,63,64, 65,66,67,68,[7] | 69 | 17% |
| Movement | 70,71 | | 72,[8] | 6% |
| Human Reproduction | 73,74,75,76, 79 | 77,78,[9] | 80 | 10% |
| Exam Emphasis | 35% | 46% | 19% | 100% |

*Question 43 was deleted from the examination because two of the alternatives listed (A and D) correctly answered the question.

NOTE: Numbers in brackets [ ] indicate the written-response questions.

In the table above, those questions identified with science process skills from the multiple-choice section of the examination are 7, 22, 23, 32, 35, 41, 51, 60, 65, 72, and 80; those from the written-response section are 1, 3, and 8. In the examination, science process skills received an emphasis of 22%.

## Provincial Averages

Table 34 contains percentage distributions for school-awarded marks, diploma examination marks, and final blended marks in Biology 30. Table 35 contains averages and standard deviations for the written-response questions and the multiple-choice questions. Averages are based on raw scores, which are the number of marks obtained on each part of the examination. The total marks possible are identified for the written-response and multiple-choice components.

Averages are based on the results achieved by 6828 students. Differences between total averages and component averages are due to rounding.

Table 34

Provincial Percentages of A, B, C, and F Grades, Averages and Standard Deviation of Scores
Biology 30

| Score | School-Awarded Mark | Diploma Examination Mark | Final Blended Mark |
|---|---|---|---|
| A (80-100%) | 17.5 | 24.9 | 20.8 |
| B (65-79%) | 35.8 | 30.1 | 34.0 |
| C (50-64%) | 38.7 | 28.1 | 36.2 |
| F (0-49%) | 7.9 | 16.8 | 9.0 |
| Average (%) | 66.0 | 66.4 | 66.8 |
| Standard Deviation | 12.6 | 16.3 | 13.9 |

Table 35

Multiple Choice and Written-Response Raw Score Totals
Biology 30

| Examination Section | Total Marks | Weighting (%) | Average | Standard Deviation |
|---|---|---|---|---|
| Written Response | 20 | 20 | 12.0 | 4.4 |
| Multiple Choice | 79 | 80 | 53.5 | 12.5 |

Table 36

Provincial Raw Score Averages for Subtests
Biology 30

| Subtest | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Cellular Processes | - | 7 | 7 | - | 5.0 | 5.0 |
| Homeostatic Mechanisms | - | 3 | 3 | - | 2.1 | 2.1 |
| Nutrition | 7 | 13 | 20 | 4.2 | 9.3 | 13.6 |
| Circulation | 3 | 12 | 15 | 1.4 | 7.9 | 9.3 |
| Gas Exchange | 1 | 6 | 7 | 0.7 | 4.1 | 4.9 |
| Metabolism | 1 | 3 | 4 | 0.3 | 1.8 | 2.1 |
| Excretion | 2 | 8 | 10 | 1.3 | 4.6 | 5.9 |
| Nervous & Hormonal Systems | 1 | 16 | 17 | 0.5 | 11.9 | 12.4 |
| Movement | 3 | 3 | 6 | 1.9 | 1.7 | 3.6 |
| Human Reproduction | 2 | 8 | 10 | 1.5 | 5.2 | 6.7 |
| Process Skills | 11 | 11 | 22 | 6.4 | 6.4 | 12.8 |

Table 37

Provincial Raw Score Averages for Cognitive Levels
Biology 30

| Cognitive Levels | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Knowledge | 3 | 32 | 35 | 1.5 | 23.3 | 24.8 |
| Comprehension and Application | 9 | 36 | 45 | 5.5 | 23.8 | 29.4 |
| Higher Mental Activities | 8 | 11 | 19 | 4.9 | 6.4 | 11.4 |

Multiple-Choice Questions

The percentage of students choosing each response for each multiple-choice question is given in Table 38. The correct response (key) for each question is also identified. Schools may use this information in conjunction with the test and with school results on individual items to determine local strengths and weaknesses.

Table 38

Results for Individual Multiple-Choice Questions
Biology 30

| Item | Key | Distribution of Responses in %* A | B | C | D | Item | Key | Distribution of Responses in %* A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D | 2.7 | 3.3 | 18.8 | 75.1 | 41 | C | 37.0 | 2.0 | 53.6 | 7.4 |
| 2 | C | 0.7 | 1.3 | 96.6 | 1.3 | 42 | B | 5.4 | 82.4 | 5.4 | 6.8 |
| 3 | C | 2.1 | 10.9 | 83.0 | 3.9 | 43** | - | - | - | - | - |
| 4 | D | 7.6 | 19.3 | 5.1 | 67.9 | 44 | B | 41.1 | 42.3 | 9.2 | 7.4 |
| 5 | A | 61.3 | 4.6 | 6.5 | 27.5 | 45 | D | 13.4 | 25.6 | 7.5 | 53.4 |
| 6 | B | 13.9 | 57.3 | 17.6 | 11.2 | 46 | C | 8.1 | 12.2 | 62.4 | 17.3 |
| 7 | D | 12.8 | 19.3 | 6.0 | 61.7 | 47 | B | 4.8 | 74.5 | 18.8 | 1.9 |
| 8 | A | 50.9 | 37.4 | 5.9 | 5.8 | 48 | D | 3.8 | 5.8 | 11.8 | 78.5 |
| 9 | A | 80.5 | 2.5 | 12.9 | 4.1 | 49 | D | 13.4 | 11.7 | 19.8 | 55.1 |
| 10 | B | 10.6 | 77.2 | 10.6 | 1.6 | 50 | D | 12.3 | 32.6 | 13.3 | 41.8 |
| 11 | C | 2.1 | 4.2 | 87.1 | 6.5 | 51 | D | 49.8 | 9.1 | 4.5 | 36.6 |
| 12 | D | 16.8 | 7.5 | 8.8 | 66.9 | 52 | B | 2.2 | 60.4 | 23.6 | 13.7 |
| 13 | A | 87.5 | 2.7 | 6.9 | 2.9 | 53 | D | 22.7 | 11.3 | 13.7 | 52.1 |
| 14 | C | 9.1 | 1.6 | 81.4 | 8.0 | 54 | A | 79.3 | 16.7 | 1.4 | 2.6 |
| 15 | B | 12.2 | 63.0 | 7.6 | 17.1 | 55 | D | 9.8 | 3.5 | 3.1 | 83.5 |
| 16 | D | 4.7 | 10.7 | 5.5 | 79.0 | 56 | A | 75.6 | 8.1 | 2.2 | 14.0 |
| 17 | B | 14.2 | 46.5 | 28.2 | 11.1 | 57 | C | 10.1 | 6.5 | 64.0 | 19.3 |
| 18 | D | 6.3 | 6.4 | 2.2 | 85.0 | 58 | D | 4.5 | 7.2 | 18.7 | 69.5 |
| 19 | C | 30.7 | 4.1 | 54.1 | 11.0 | 59 | C | 3.1 | 4.3 | 81.8 | 10.8 |
| 20 | B | 5.0 | 83.5 | 6.3 | 5.1 | 60 | D | 5.2 | 5.3 | 2.0 | 87.4 |
| 21 | A | 81.8 | 1.6 | 10.1 | 6.5 | 61 | A | 86.6 | 3.5 | 7.7 | 2.1 |
| 22 | B | 16.8 | 54.3 | 9.5 | 19.3 | 62 | A | 83.2 | 7.0 | 6.8 | 3.0 |
| 23 | B | 4.0 | 60.4 | 25.2 | 10.3 | 63 | D | 12.1 | 19.3 | 17.9 | 50.7 |
| 24 | A | 66.1 | 12.1 | 6.0 | 15.8 | 64 | D | 4.0 | 18.0 | 14.7 | 63.3 |
| 25 | B | 14.7 | 54.2 | 21.1 | 9.9 | 65 | A | 63.7 | 10.4 | 21.0 | 4.9 |
| 26 | C | 2.2 | 8.2 | 78.9 | 10.8 | 66 | C | 0.9 | 14.9 | 80.1 | 4.2 |
| 27 | A | 74.8 | 9.5 | 9.9 | 5.8 | 67 | B | 8.6 | 76.4 | 7.9 | 7.0 |
| 28 | A | 71.9 | 7.8 | 15.5 | 4.8 | 68 | B | 6.0 | 64.6 | 22.0 | 7.2 |
| 29 | A | 82.8 | 9.5 | 5.3 | 2.4 | 69 | C | 3.6 | 4.7 | 80.6 | 10.9 |
| 30 | C | 20.0 | 41.0 | 31.8 | 7.2 | 70 | A | 80.8 | 11.6 | 3.1 | 4.4 |
| 31 | A | 80.2 | 4.8 | 11.1 | 3.9 | 71 | A | 39.4 | 16.4 | 26.5 | 17.7 |
| 32 | A | 63.1 | 5.0 | 23.6 | 8.2 | 72 | C | 12.5 | 28.1 | 44.8 | 14.5 |
| 33 | C | 31.4 | 3.7 | 62.1 | 2.7 | 73 | D | 5.6 | 6.8 | 3.2 | 84.4 |
| 34 | D | 4.4 | 4.0 | 16.0 | 75.6 | 74 | A | 78.7 | 11.5 | 4.8 | 5.0 |
| 35 | C | 5.9 | 20.3 | 45.1 | 28.5 | 75 | C | 6.3 | 30.2 | 51.3 | 12.2 |
| 36 | D | 3.0 | 6.8 | 7.0 | 83.2 | 76 | C | 14.4 | 21.4 | 45.5 | 18.6 |
| 37 | B | 8.4 | 81.3 | 5.1 | 5.3 | 77 | A | 49.0 | 10.8 | 11.2 | 28.9 |
| 38 | A | 66.9 | 5.0 | 22.6 | 5.4 | 78 | B | 3.0 | 78.4 | 12.8 | 5.9 |
| 39 | C | 6.4 | 2.0 | 83.8 | 7.7 | 79 | C | 4.4 | 13.2 | 58.7 | 23.8 |
| 40 | B | 18.9 | 42.4 | 27.4 | 11.3 | 80 | D | 15.2 | 6.3 | 8.0 | 70.4 |

*The sum of the percentages for some questions is less than 100% because the No Response category is not included. This category does not exceed 0.2% for any question.

**Question 43 was deleted from the examination because two of the alternatives listed (A and D) correctly answered the question.

Table 39

Distribution of Marks for Written-Response Questions
Biology 30

| Question | Percentage of Students Obtaining Each Mark | | | | | | |
|---|---|---|---|---|---|---|---|
| | NR* | 0 | 1 | 2 | 3 | 4 | 5 |
| 1 | 1.1 | 8.9 | 10.7 | 15.1 | 22.4 | 17.0 | 24.8 |
| 2 | 8.7 | 21.2 | 16.0 | 54.1 | - | - | - |
| 3 | 1.3 | 17.5 | 39.3 | 23.3 | 18.7 | - | - |
| 4 | 2.6 | 23.4 | 74.1 | - | - | - | - |
| 5 | 13.8 | 59.1 | 27.1 | - | - | - | - |
| 6 | 1.1 | 14.5 | 38.3 | 46.0 | - | - | - |
| 7 | 3.1 | 44.2 | 52.7 | - | - | - | - |
| 8 | 1.1 | 9.2 | 20.6 | 35.2 | 33.9 | - | - |
| 9 | 2.3 | 8.7 | 24.3 | 64.6 | - | - | - |

*No Response

The total number of marks possible, the average mark awarded to students, and the difficulty level for each written-response question are summarized in Table 40. The difficulty level is the average divided by total marks possible.

Table 40

Average Marks Awarded for Written-Response Questions
Biology 30

| Question | Total Marks | Average | Difficulty Level |
|---|---|---|---|
| 1 | 5 | 3.0 | 0.60 |
| 2 | 2 | 1.2 | 0.62 |
| 3 | 3 | 1.4 | 0.47 |
| 4 | 1 | 0.7 | 0.74 |
| 5 | 1 | 0.3 | 0.27 |
| 6 | 2 | 1.3 | 0.65 |
| 7 | 1 | 0.5 | 0.53 |
| 8 | 3 | 1.9 | 0.64 |
| 9 | 2 | 1.5 | 0.77 |

## SECTION 7: CHEMISTRY 30 DIPLOMA EXAMINATION

The Chemistry 30 Diploma Examination consists of both multiple-choice questions (worth 80% of the total examination mark) and written-response questions (worth 20% of the total examination mark).

Table 41

January 1986 Chemistry 30 Diploma Examination Blueprint

| Subject Matter | Questions By Cognitive Level | | | Exam Emphasis |
|---|---|---|---|---|
| | Knowledge | Comprehension and Application | Higher Mental Activities | |
| Chemical Energetics | 1,2,3,4,6 9,[1] | 5,7,10,11,12 13,14,15,16 17,18 | 8,[1] | 33% |
| Acids and Bases | 19,21,23, 26,31,[2] | 22,24,25,27, 29,30,32,33, 34,36,37 | 20,28,35 [2] | 33% |
| Oxidation-Reduction | 43,44,46, 50,55,[3] | 38,39,40,41, 42,45,47,48, 51,52,53,54, [3] | 49,56,[3] | 34% |
| Exam Emphasis | 29% | 53% | 18% | 100% |

NOTE: Numbers in brackets [] indicate the written-response questions.

In the table above, those questions identified with science process skills from the multiple-choice section of the examination are 2, 8, 9, 13, 19, 20, 21, 22, 26, 28, 31, 32, 33, 34, 35, 36, 37, 38, 40, 47, 48, 49, 50, 51, 53, 54, and 56; those from the written-response sections are 2 and 3. In the examination, science process skills received an emphasis of 51%.

## Provincial Averages

Table 42 contains percentage distributions for school-awarded marks, diploma examination marks, and final blended marks in Chemistry 30. Table 43 contains averages and standard deviations for the written-response questions and the multiple-choice questions. Averages are based on raw scores, which are the number of marks obtained on each part of the examination. The total marks possible are identified for the written-response and multiple-choice components.

Averages are based on the results achieved by 6351 students. Differences between total averages and component averages are due to rounding.

Table 42

Provincial Percentages of A, B, C, and F Grades, Averages and Standard Deviation of Scores
Chemistry 30

| Score | School-Awarded Marks | Diploma Examination Mark | Final Blended Mark |
|---|---|---|---|
| A (80-100%) | 19.0 | 19.2 | 18.2 |
| B (65-79%) | 35.5 | 26.1 | 31.1 |
| C (50-64%) | 36.9 | 32.9 | 39.7 |
| F (0-49%) | 8.6 | 21.8 | 11.0 |
| Average (%) | 66.3 | 63.0 | 65.1 |
| Standard Deviation | 13.3 | 16.6 | 14.2 |

Table 43

Multiple Choice and Written-Response Raw Score Totals
Chemistry 30

| Examination Section | Total Marks | Weighting (%) | Average | Standard Deviation |
|---|---|---|---|---|
| Written Response | 14 | 20 | 8.1 | 3.5 |
| Multiple Choice | 56 | 80 | 36.0 | 9.0 |

Table 44

Provincial Raw Score Averages for Subtests
Chemistry 30

| Subtest | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Chemical Energetics | 5 | 18 | 23 | 2.2 | 12.0 | 14.3 |
| Acids and Bases | 4 | 19 | 23 | 3.2 | 12.5 | 15.6 |
| Oxidation Reduction | 5 | 19 | 24 | 2.7 | 11.5 | 14.2 |
| Process Skills | 9 | 27 | 36 | 5.9 | 17.0 | 22.8 |

Table 45

Provincial Raw Score Averages for Cognitive Levels
Chemistry 30

| Cognitive Levels | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Knowledge | - | 16 | 16 | - | 11.0 | 11.0 |
| Comprehension and Application | 5 | 34 | 39 | 2.7 | 21.7 | 24.4 |
| Higher Mental Activities | 9 | 6 | 15 | 5.4 | 3.3 | 8.7 |

Multiple-Choice Questions

The percentage of students choosing each response for each multiple-choice question is given in Table 46. The correct response (key) for each question is also identified. Schools may use this information in conjunction with the test and with school results on individual items to determine local strengths and weaknesses.

Table 46

Results for Individual Multiple-Choice Questions
Chemistry 30

| Item | Key | Distribution of Responses in %* | | | | Item | Key | Distribution of Responses in %* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | | | A | B | C | D |
| 1 | A | 59.9 | 18.8 | 11.2 | 10.1 | 29 | C | 10.1 | 10.5 | 60.7 | 18.6 |
| 2 | C | 17.8 | 25.4 | 51.3 | 5.3 | 30 | A | 56.9 | 17.4 | 3.3 | 22.3 |
| 3 | B | 7.0 | 58.1 | 3.7 | 31.1 | 31 | B | 4.5 | 74.6 | 10.2 | 10.8 |
| 4 | D | 1.3 | 0.7 | 2.9 | 95.1 | 32 | C | 3.6 | 27.7 | 57.6 | 10.9 |
| 5 | A | 50.7 | 39.5 | 4.3 | 5.3 | 33 | B | 9.9 | 67.4 | 7.7 | 15.0 |
| 6 | A | 74.1 | 10.6 | 9.1 | 6.2 | 34 | C | 8.8 | 16.6 | 61.9 | 12.4 |
| 7 | D | 6.7 | 13.0 | 21.4 | 58.8 | 35 | A | 35.4 | 33.5 | 15.0 | 16.0 |
| 8 | C | 9.9 | 13.0 | 60.2 | 16.8 | 36 | A | 44.2 | 18.3 | 22.2 | 15.0 |
| 9 | A | 86.7 | 9.0 | 3.0 | 1.3 | 37 | A | 76.6 | 11.4 | 6.1 | 5.8 |
| 10 | B | 4.6 | 74.2 | 11.1 | 9.8 | 38 | A | 60.1 | 6.9 | 16.7 | 16.2 |
| 11 | C | 8.5 | 2.7 | 83.0 | 5.8 | 39 | A | 71.1 | 17.5 | 5.6 | 5.8 |
| 12 | A | 75.2 | 8.6 | 4.2 | 11.9 | 40 | C | 4.3 | 8.5 | 82.9 | 4.3 |
| 13 | C | 9.4 | 8.0 | 68.5 | 13.8 | 41 | C | 3.1 | 8.4 | 80.8 | 7.6 |
| 14 | A | 76.8 | 7.8 | 7.6 | 7.6 | 42 | B | 11.5 | 47.9 | 13.5 | 27.0 |
| 15 | C | 8.4 | 25.3 | 56.7 | 9.5 | 43 | C | 8.9 | 19.5 | 67.0 | 4.5 |
| 16 | B | 13.1 | 53.5 | 14.8 | 18.1 | 44 | D | 7.3 | 6.3 | 23.5 | 62.7 |
| 17 | B | 13.8 | 64.8 | 17.1 | 4.2 | 45 | A | 64.8 | 7.2 | 13.3 | 14.8 |
| 18 | C | 29.1 | 14.3 | 51.7 | 4.8 | 46 | D | 15.7 | 28.2 | 22.9 | 32.9 |
| 19 | A | 85.6 | 2.5 | 7.7 | 4.2 | 47 | A | 41.1 | 46.0 | 6.2 | 6.6 |
| 20 | A | 65.1 | 23.4 | 5.0 | 6.4 | 48 | C | 22.5 | 23.3 | 46.8 | 7.1 |
| 21 | B | 7.1 | 63.9 | 17.2 | 11.7 | 49 | D | 6.1 | 13.5 | 14.1 | 66.2 |
| 22 | B | 10.4 | 71.2 | 9.9 | 8.3 | 50 | A | 46.3 | 17.3 | 21.3 | 15.0 |
| 23 | C | 3.0 | 6.4 | 89.0 | 1.6 | 51 | C | 13.9 | 11.8 | 65.3 | 9.0 |
| 24 | B | 11.5 | 70.6 | 10.5 | 7.3 | 52 | A | 69.6 | 20.2 | 1.4 | 8.7 |
| 25 | C | 3.9 | 4.1 | 85.1 | 6.9 | 53 | B | 8.5 | 62.3 | 17.2 | 11.9 |
| 26 | B | 6.7 | 83.7 | 4.8 | 4.8 | 54 | A | 65.8 | 5.5 | 11.5 | 17.0 |
| 27 | B | 51.6 | 40.4 | 3.8 | 4.3 | 55 | D | 11.6 | 9.0 | 15.4 | 63.8 |
| 28 | C | 17.1 | 17.0 | 56.0 | 9.8 | 56 | B | 16.0 | 45.2 | 14.3 | 23.7 |

*The sum of the percentages for some questions is less than 100% because the No Response category is not included. This category does not exceed 0.8% for any question.

Table 47

Distribution of Marks for Written-Response Questions
Chemistry 30

| Question | Percentage of Students Obtaining Each Mark | | | | | | |
|---|---|---|---|---|---|---|---|
| | NR* | 0 | 1 | 2 | 3 | 4 | 5 |
| 1 | 2.0 | 14.0 | 23.8 | 14.8 | 20.8 | 14.6 | 10.0 |
| 2 | 0.9 | 1.1 | 5.9 | 14.7 | 30.0 | 47.4 | - |
| 3 | 5.4 | 14.4 | 15.2 | 12.3 | 11.5 | 11.0 | 30.2 |

*No Response

The total number of marks possible, the average mark awarded to students, and the difficulty level for each written-response question are summarized in Table 48. The difficulty level is the average divided by total marks possible.

Table 48

Average Marks Awarded for Written-Response Questions
Chemistry 30

| Question | Total Marks | Average | Difficulty Level |
|---|---|---|---|
| 1 | 5 | 2.2 | 0.45 |
| 2 | 4 | 3.1 | 0.79 |
| 3 | 5 | 2.7 | 0.54 |

## SECTION 8: PHYSICS 30 DIPLOMA EXAMINATION

The Physics 30 Diploma Examination consists of both multiple-choice questions (worth 80% of the total examination mark) and written-response questions (worth 20% of the total examination mark).

Table 49

January 1986 Physics 30 Diploma Examination Blueprint

| | Questions By Cognitive Level | | | |
|---|---|---|---|---|
| Subject Matter | Knowledge | Comprehension and Application | Higher Mental Activities | Exam Emphasis |
| Light | 1,6,7,10, 11,12,13 | 2,8,9,[1] | 3,4,5 | 24% |
| Electric and Magnetic Fields | 14,18,21, 22,23,25 | 15,16,19,20, 24 | 17,26,[2] | 27% |
| EM Radiation | 27,29,31, 36 | 28,30,32,33, 34 | 35 | 14% |
| Structure of Matter | 37,44,47, 48 | 38,39,41,42, 43,45,46,[3] | 40 | 20% |
| Modern Physical Theories | 49,51,56 | 50,53,55,[4] | 52,54 | 15% |
| Exam Emphasis | 34% | 48% | 18% | 100% |

NOTE: Numbers in brackets [] indicate the written-response questions.

In the table above, those questions identified with science process skills from the multiple-choice section of the examination are 2, 3, 4, 5, 16, 17, 30, 33, 34, 35, 39, 41, and 52; those from the written-response sections are 1, 2, and 3. In the examination, science process skills received an emphasis of 34%.

## Provincial Averages

Table 50 contains percentage distributions for school-awarded marks, diploma examination marks, and final blended marks in Physics 30. Table 51 contains averages and standard deviations for the written-response questions and the multiple-choice questions. Averages are based on raw scores, which are the number of marks obtained on each part of the examination. The total marks possible are identified for the written-response and multiple-choice components.

Averages are based on the results achieved by 2801 students. Differences between total averages and component averages are due to rounding.

Table 50

Provincial Percentages of A, B, C, and F Grades, Averages and Standard Deviation of Scores
Physics 30

| Score | School-Awarded Marks | Diploma Examination Mark | Final Blended Mark |
|---|---|---|---|
| A (80-100%) | 23.0 | 22.2 | 21.8 |
| B (65-79%) | 37.5 | 31.4 | 36.6 |
| C (50-64%) | 32.9 | 28.2 | 33.3 |
| F (0-49%) | 6.6 | 18.2 | 8.2 |
| Average (%) | 68.2 | 65.4 | 67.2 |
| Standard Deviation | 13.0 | 16.2 | 13.8 |

Table 51

Multiple Choice and Written-Response Raw Score Totals
Physics 30

| Examination Section | Total Marks | Weighting (%) | Average | Standard Deviation |
|---|---|---|---|---|
| Written Response | 14 | 20 | 7.0 | 3.5 |
| Multiple Choice | 56 | 80 | 38.7 | 8.6 |

Table 52

Provincial Raw Score Averages for Subtests
Physics 30

| Subtest | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Light | 4 | 13 | 17 | 1.6 | 9.6 | 11.2 |
| Electric and Magnetic Fields | 4 | 13 | 17 | 2.4 | 9.0 | 11.4 |
| EM Radiation | - | 10 | 10 | - | 7.1 | 7.1 |
| Structure of Matter | 3 | 12 | 15 | 1.5 | 7.9 | 9.4 |
| Modern Physical Theories | 3 | 8 | 11 | 1.4 | 5.2 | 6.5 |
| Process Skills | 11 | 13 | 24 | 5.6 | 7.5 | 13.1 |

Table 53

Provincial Raw Score Averages for Cognitive Levels
Physics 30

| Cognitive Levels | Total Marks Possible | | | Raw Score Averages | | |
|---|---|---|---|---|---|---|
| | Written Response | Multiple Choice | Total | Written Response | Multiple Choice | Total |
| Knowledge | - | 24 | 24 | - | 17.4 | 17.4 |
| Comprehension and Application | 10 | 23 | 33 | 4.5 | 16.4 | 20.9 |
| Higher Mental Activities | 4 | 9 | 13 | 2.4 | 5.0 | 7.5 |

## Multiple-Choice Questions

The percentage of students choosing each response for each multiple-choice question is given in Table 54. The correct response (key) for each question is also identified. Schools may use this information in conjunction with the test and with school results on individual items to determine local strengths and weaknesses.

Table 54

Results for Individual Multiple-Choice Questions
Physics 30

| Item | Key | Distribution of Responses in %* A | B | C | D | Item | Key | Distribution of Responses in %* A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | D | 2.4 | 0.7 | 4.1 | 92.8 | 29 | A | 87.6 | 2.7 | 7.2 | 2.5 |
| 2 | C | 1.1 | 45.3 | 51.7 | 1.8 | 30 | D | 16.1 | 6.4 | 9.5 | 67.9 |
| 3 | A | 69.8 | 6.1 | 17.0 | 7.1 | 31 | A | 77.7 | 3.1 | 9.6 | 9.6 |
| 4 | A | 88.6 | 4.9 | 4.3 | 2.1 | 32 | D | 2.2 | 7.6 | 3.2 | 87.1 |
| 5 | B | 22.4 | 36.1 | 23.4 | 17.2 | 33 | C | 11.1 | 14.8 | 65.7 | 8.4 |
| 6 | C | 17.2 | 8.1 | 69.3 | 5.4 | 34 | D | 2.2 | 7.6 | 4.8 | 85.3 |
| 7 | D | 4.6 | 3.6 | 10.4 | 81.5 | 35 | D | 20.9 | 15.2 | 23.1 | 40.6 |
| 8 | B | 10.4 | 67.8 | 17.4 | 4.3 | 36 | A | 61.0 | 4.7 | 23.6 | 10.6 |
| 9 | D | 12.1 | 5.0 | 2.7 | 80.2 | 37 | C | 13.5 | 12.4 | 59.8 | 14.2 |
| 10 | D | 1.6 | 17.3 | 3.9 | 77.1 | 38 | D | 5.4 | 6.2 | 3.8 | 84.4 |
| 11 | C | 2.2 | 5.5 | 87.2 | 5.1 | 39 | D | 16.6 | 15.6 | 23.8 | 44.1 |
| 12 | A | 85.7 | 5.0 | 5.2 | 4.1 | 40 | C | 9.6 | 26.9 | 39.0 | 24.4 |
| 13 | D | 8.1 | 7.3 | 12.2 | 72.5 | 41 | A | 50.9 | 11.9 | 18.7 | 18.4 |
| 14 | B | 10.3 | 74.9 | 7.4 | 7.3 | 42 | B | 5.8 | 85.0 | 7.5 | 1.7 |
| 15 | C | 7.2 | 14.8 | 74.2 | 3.8 | 43 | C | 4.6 | 11.4 | 79.7 | 4.2 |
| 16 | D | 11.1 | 17.3 | 26.3 | 45.3 | 44 | B | 13.3 | 65.0 | 2.3 | 19.3 |
| 17 | B | 37.4 | 34.1 | 21.2 | 7.0 | 45 | B | 12.1 | 64.6 | 8.6 | 14.5 |
| 18 | C | 6.5 | 8.1 | 66.7 | 18.7 | 46 | C | 9.8 | 10.4 | 70.3 | 9.1 |
| 19 | C | 0.8 | 1.2 | 96.0 | 1.9 | 47 | C | 6.4 | 12.3 | 74.2 | 7.0 |
| 20 | A | 70.8 | 26.6 | 1.3 | 1.2 | 48 | B | 17.3 | 69.8 | 6.3 | 6.5 |
| 21 | B | 2.5 | 68.0 | 13.5 | 16.0 | 49 | B | 11.0 | 63.2 | 14.1 | 11.7 |
| 22 | C | 8.2 | 4.1 | 61.5 | 26.1 | 50 | D | 3.0 | 7.0 | 12.7 | 77.0 |
| 23 | D | 7.1 | 15.5 | 6.7 | 70.6 | 51 | A | 52.2 | 18.2 | 19.1 | 10.4 |
| 24 | C | 3.6 | 3.5 | 90.9 | 2.0 | 52 | A | 73.8 | 16.3 | 6.3 | 3.3 |
| 25 | C | 5.3 | 16.9 | 65.2 | 12.5 | 53 | D | 4.8 | 7.5 | 8.4 | 79.1 |
| 26 | D | 2.2 | 6.7 | 7.2 | 83.8 | 54 | B | 17.0 | 37.1 | 21.9 | 23.8 |
| 27 | A | 90.6 | 6.8 | 1.1 | 1.5 | 55 | B | 8.0 | 70.4 | 15.1 | 6.4 |
| 28 | B | 10.7 | 46.6 | 21.2 | 21.3 | 56 | B | 15.1 | 61.3 | 8.6 | 13.6 |

*The sum of the percentages for some questions is less than 100% because the No Response category is not included. This category does not exceed 1.4% for any question.

Table 55

Distribution of Marks for Written-Response Questions
Physics 30

| Question | Percentage of Students Obtaining Each Mark | | | | | |
|---|---|---|---|---|---|---|
| | NR* | 0 | 1 | 2 | 3 | 4 |
| 1 | 3.1 | 23.6 | 24.6 | 23.4 | 8.5 | 16.8 |
| 2 | 2.7 | 8.6 | 14.8 | 19.8 | 28.4 | 25.8 |
| 3 | 4.3 | 16.9 | 27.9 | 31.8 | 19.2 | - |
| 4 | 8.0 | 24.3 | 21.4 | 21.0 | 25.3 | - |

*No Response

The total number of marks possible, the average mark awarded to students, and the difficulty level for each written-response question are summarized in Table 56. The difficulty level is the average divided by total marks possible.

Table 56

Average Marks Awarded for Written-Response Questions
Physics 30

| Question | Total Marks | Average | Difficulty Level |
|---|---|---|---|
| 1 | 4 | 1.6 | 0.41 |
| 2 | 4 | 2.4 | 0.61 |
| 3 | 3 | 1.5 | 0.50 |
| 4 | 3 | 1.4 | 0.46 |

## SECTION 9: SUMMARY OF RESULTS

In Table 57, the provincial distribution of student marks in the diploma examination courses is summarized. The percentage distribution for the *school-awarded mark, the January 1986* diploma examination mark, and the final blended mark achieved by students is shown for each of the A, B, C, and F grade categories. In addition, a comparison with the January 1985 diploma examination course results is provided.

Table 57

Distribution of Student Marks in Diploma Examination Courses
January 1986 Examination Administration and January 1985 Final Course Mark

| Diploma Examination Course | January 1986 | | | January 1985 Final Mark |
|---|---|---|---|---|
| | School-Awarded Mark | Diploma Examination Mark | Final Blended Mark | |
| English 30 | | | N = 8 284 | N = 7 986 |
| A (80-100%) | 10.7 | 7.8 | 7.6 | 5.4 |
| B (65-79%) | 38.9 | 34.2 | 38.8 | 39.9 |
| C (50-64%) | 42.4 | 44.5 | 47.8 | 49.2 |
| F (0-49%) | 8.0 | 13.5 | 5.8 | 5.5 |
| Mean | 64.2 | 62.3 | 63.8 | 63.5 |
| Standard Deviation | 11.8 | 12.0 | 10.7 | 10.0 |
| English 33 | | | N = 4 215 | N = 4 308 |
| A (80-100%) | 3.7 | 8.4 | 3.5 | 3.3 |
| B (65-79%) | 31.1 | 44.0 | 40.3 | 42.6 |
| C (50-64%) | 51.2 | 37.0 | 50.2 | 49.4 |
| F (0-49%) | 14.0 | 10.6 | 6.0 | 4.8 |
| Mean | 59.8 | 64.4 | 62.6 | 63.4 |
| Standard Deviation | 11.1 | 11.6 | 9.6 | 9.1 |
| Social Studies 30 | | | N = 7 590 | N = 7 760 |
| A (80-100%) | 13.9 | 16.0 | 14.2 | 12.0 |
| B (65-79%) | 36.8 | 40.1 | 39.7 | 37.5 |
| C (50-64%) | 41.1 | 32.2 | 39.7 | 41.8 |
| F (0-49%) | 8.1 | 11.7 | 6.4 | 8.7 |
| Mean | 64.9 | 66.0 | 65.9 | 64.4 |
| Standard Deviation | 12.0 | 13.1 | 11.8 | 12.2 |

[1]*The figures may be changed slightly as a result of appeals of school-awarded marks, rereads of diploma examinations, or special cases considerations.*

*(Continued)*

Table 57 (continued)

| Diploma Examination Course | January 1986 | | | January 1985 Final Mark |
|---|---|---|---|---|
| | School-Awarded Mark | Diploma Examination Mark | Final Blended Mark | |
| Mathematics 30 | | | N = 8 357 | N = 7 954 |
| A (80-100%) | 21.2 | 24.3 | 22.2 | 20.0 |
| B (65-79%) | 32.5 | 28.5 | 31.1 | 32.5 |
| C (50-64%) | 36.0 | 24.7 | 34.5 | 35.4 |
| F (0-49%) | 10.3 | 22.5 | 12.3 | 12.1 |
| Mean | 66.3 | 64.7 | 66.0 | 65.7 |
| Standard Deviation | 14.5 | 18.1 | 15.5 | 14.9 |
| Biology 30 | | | N = 6 828 | N = 6 230 |
| A (80-100%) | 17.5 | 24.9 | 20.8 | 17.6 |
| B (65-79%) | 35.8 | 30.1 | 34.0 | 35.3 |
| C (50-64%) | 38.7 | 28.1 | 36.2 | 38.1 |
| F (0-49%) | 7.9 | 16.8 | 9.0 | 9.0 |
| Mean | 66.0 | 66.4 | 66.8 | 65.7 |
| Standard Deviation | 12.6 | 16.3 | 13.9 | 13.2 |
| Chemistry 30 | | | N = 6 351 | N = 5 955 |
| A (80-100%) | 19.0 | 19.2 | 18.2 | 19.8 |
| B (65-79%) | 35.5 | 26.1 | 31.1 | 33.9 |
| C (50-64%) | 36.9 | 32.9 | 39.7 | 36.5 |
| F (0-49%) | 8.6 | 21.8 | 11.0 | 9.9 |
| Mean | 66.3 | 63.0 | 65.1 | 66.1 |
| Standard Deviation | 13.3 | 16.6 | 14.2 | 14.0 |
| Physics 30 | | | N = 2 801 | N = 2 962 |
| A (80-100%) | 23.0 | 22.2 | 21.8 | 20.5 |
| B (65-79%) | 37.5 | 31.4 | 36.6 | 35.8 |
| C (50-64%) | 32.9 | 28.2 | 33.3 | 34.7 |
| F (0-49%) | 6.6 | 18.2 | 8.2 | 9.0 |
| Mean | 68.2 | 65.4 | 67.2 | 66.7 |
| Standard Deviation | 13.0 | 16.2 | 13.8 | 13.9 |